

You Ain't From around Here! Exotic Invasive of the Quarter: Kudzu Bug (*Megacopta cribraria*)

By: Jennifer Gagnon, Virginia Tech

Most exotic species that are invasive in the U.S. are not invasive in their native range because there are biological controls (insects, diseases, climate conditions) which keep them in check. And sometimes we go looking for these biological controls to bring to the U.S. to help us manage problem species. Biological controls undergo rigorous testing before they are released into the wild. But what happens when one of those biological controls makes the trek across the ocean and lands at Hartsfield International Airport in Atlanta, untested and uninvited? We're in the process of finding out.

As all regular readers of the column are aware, kudzu (aka the vine that ate the South) is an exotic invasive species which causes extensive problems throughout the SE United States (see [VFLU Volume 21.4, Fall 2007](#)). In its native Japan, kudzu is kept under control in a number of ways. For one, many parts of the plant are used in cooking (see <http://www.southernangel.com/food/kudzurcp.html> for delicious recipes - I know deep-fried kudzu greens are a favorite in my family!). But humans aren't the only ones eating the vines...let me introduce you to the kudzu bug.

The kudzu bug (aka bean plataspid, lablab bug, or globular stink bug) feeds on kudzu in its native habitat. And in 2009 it went international, arriving in Georgia. In just two years, it has spread to most counties in Georgia and North Carolina, all of South Carolina, a few counties in Alabama, and it has just been found in Patrick County, Virginia. Two-hundred and fifty samples of the bug have been traced back to one mother, lovingly called GA-1. According to the USDA Forest Service, last year these critters reduced kudzu growth by 32% on research plots in Athens, Georgia.

So, let us send out an embossed invitation and roll out the red carpet for this bug, right? Not so fast. First, in terms of kudzu reduction, even though the foliage growth is decreased, the roots can be 12 feet deep and weigh up to 300 pounds. So it could take many years of feeding to weaken the plants. And, much more importantly, the kudzu bug feeds on legumes (plants which fix nitrogen in the soil). Kudzu is a legume, but so are soy, mung, kidney, lima, and green beans. Untreated soybean crops in Georgia infested with the kudzu bug are showing an average of 19% reduction in production.



*Kudzu bugs on a corn stalk.
Photo by: Jeremy Green, Clemson
University.*

The insects are true bugs, with sucking mouth parts. They don't eat the actual beans – instead they feed on the main stem. Adults and immature insects (nymphs) gather in large groups and suck sap from a host plant, weakening and stunting it, resulting in a reduction in the number of pods per plant and the number of beans per pod. In the U.S. over the past 10 years, we've grown an average of about 3 billion bushels of soybeans, worth approximately \$32 billion, so significant reductions in yield from kudzu bugs could have a major economic impact!



Kudzu bugs look for a cozy place to overwinter once their food sources start to die. Photo by: Jeremy Greene, Clemson University.

In addition to eating valuable crops, the kudzu bug has a couple of other endearing traits. For one, it congregates on light-colored surfaces and overwinters in homes (like the much-hated Asian ladybeetle – see [VFLU Volume 24.1 Winter 2010](#)). Property owners with nearby kudzu patches can expect to find the kudzu bug on the sides of their homes and in their cars. And, like the brown marmorated stink bug which currently co-habitates with many of us, the kudzu bug emits an unpleasant odor when disturbed.

How to Identify the Kudzu Bug

Although the kudzu bug resembles the brown marmorated stink bug, it is actually in a different family, and much smaller, about 0.25" in length (pea-sized). They are greenish-brown, and round with a wide posterior. They appear to waddle when they walk and are excellent fliers (which helps account for their rapid spread across the Southeast).



In addition to being much larger, the brown marmorated stink bug (left) has a distinctive shield-shaped body instead of a square-shaped body like the kudzu bug (right). Photos by: Daniel R. Suiter, University of Georgia (left) and Susan Ellis (right).

How to Control the Kudzu Bug

What does all this mean? Does this alter our kudzu control efforts? Less kudzu means the bugs may simply eat more of our desirable agronomic crops. So we keep the kudzu? Grow more kudzu? If they are outside your house or car, they can be controlled with any over-

the-counter insecticide. For bugs inside your house or car, neither bug spray nor squashing (recall the foul odor they emit) are recommended. Minimizing the number of bugs that get into your home is the best tactic – the same measures that keep the Asian ladybeetle out are effective against the kudzu bug. If they do infest your home or car, use a vacuum to suck them up and change the bag when you finish. Keep in mind, if there is a patch of kudzu nearby, you will quickly get reinfested, so for a control program to be successful, it must also include kudzu removal. Fortunately, the bugs do not bite and do not eat houseplants.

Infested agricultural crops can be treated successfully with insecticides. However, timing of treatment may be critical. Since kudzu bugs feed on the stems of plants, pesticides applied from above may not make contact, especially late in the season when the crops have dense foliage. Pesticide application when crops are young may result in better pesticide-bug contact and prevent large population build-ups later in the season.



Egg masses magnified (left), and deposited on a leaf (right). Photos by: Paul Smith, University of Georgia (left), and Jeremy Greene, Clemson University (right).

Early tests indicate pyrethroid insecticides (man-made pesticides similar to the natural pesticide pyrethrum, which is produced by chrysanthemum flowers), work well. And perhaps a combination of pyrethroid and neonicotinoid insecticides will work even better. Entomologists are also working on a biological control, something that is a natural enemy of the kudzu bug in Asia.

Recall, this insect has only been in the U.S. for 2.5 years now. More research is needed to find the most efficient, safe and economical way to deal with this new pest.

Watch videos about the kudzu bug on You Tube: <http://bit.ly/Kzk98C>

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